

R E M A R K S

In the Office Action, claims 1-3, 7, 10, 13, 14, 16 and 17 are rejected under 35 USC 103(a) as being unpatentable over Deter (US 5,864,432) in view of Sakuma et al (US 6,292,305) and further in view of Kawakami (US 2001/0001241) for reasons set forth in the Office Action. Claim 15 was rejected under 35 USC 103 as being unpatentable over Deter in view of Sakuma et al and further in view of Stahl (5,557,353) for reasons set forth in the Office Action. Claims 4, 5, 8, 9, 18, and 19 were rejected under 35 USC 103(a) as being unpatentable over Deter (US 5,864,432) in view of Sakuma et al (US 6,292,305) and Kawakami and further in view of Lys (US 6,211,626). Claims 11-12 were rejected under 35 USC 103(a) as being unpatentable over the combined teachings of Deter, Sakuma et al, Kawakami and Asakawa et al (US 5,892,598) for reasons set forth in the Office Action.

Reconsideration of these rejections is requested respectfully in view of the argument herein.

In order to secure allowable subject matter, and to overcome the rejection under 35 USC 103, claim 1 is amended by inserting in line 5 after the word "red", the words "a multiplicity of" and after the word "and" the words "a multiplicity of". Thus it should be clear that of each of the different red, blue and green light-emitting diodes, there is a multiple number. Similarly there is amendment of claims 4, 5, 8, 9, 15, 16, 18 and 19 in the same manner. This distinguishes over Deter. Deter describes systems in Figures 2-6 and the corresponding description col. 11 line 37 - col. 12 line 36 which are different from the teachings of the present specification and the claims as amended.

In Fig. 2 of Deter one LED 3 is used to illuminate an LCD 6, not a multiplicity of LEDs. In Fig. 3 one red, one blue and one green laser LED are used to illuminate the LCD 6. In Figures 4, 5 and 6, there is no at least partially light-transmitting display being used since the information to be displayed (character "L"

in Figs. 4 and 5) is generated by illuminating such LEDs which form the respective character. Furthermore, in Figs. 4 and 5 there is taught use of a single color.

Multiple colored LEDs are used in Fig. 6 of Deter, but there is no partially light-transmitting display. Furthermore, there is not used any cooling device in Deter; the person skilled in the art is prevented from using such a device since, on the back-side of the LED arrays 18, 15, 20 of Figs. 4-6, there are provided control electronics 17, 16 and 21 which do not provide any cooling; to the contrary, they provide additional heat.

The different teachings of Deter show complete functional devices, so the person of ordinary skill in the art would not combine them with other elements of the prior art because the person of ordinary skill in the art always avoids adding unnecessary items, so one would not add an LCD to Figs. 4-6.

According to Deter, the number of LCDs of the different colors has to be equal, as can be seen in Fig. 6, so that the rejection of claim 4 is believed to be in error.

Furthermore, the arrangement of the LED matrices in Figs. 4-6 of Deter is right-angled and not round. The person skilled in the art has no reason to change the form of LED matrix, so that the person skilled in the art would not provide a round form for Deter's devices, so claim 5 also should be allowable.

Furthermore, from Deter it cannot be seen that the LEDs are chip pads fitted on a metallic ground, because there are provided control electronics 17, 16 and 21. This would direct one away from combining Deter with the other references. Therefore claim 1 also should be allowable.

In Deter each LED is controllable so that different characters and signs can be displayed. So the LEDs are not connected in series, contrary to present claim 8. In Deter it is required that the LEDs are not connected in series and it is not clear why the person skilled in the art would have changed Deter's arrangement. So the person skilled in the art would not have changed the arrangement since there is no reason to do so.

Deter uses an LED display only with other light-sources. Matrix LEDs are used in Deter only without any LCD since they are not required. So the person skilled in the art, and having the information from Deter, would not use them, so that claims 10-12 also should be allowable.

In Deter the numbers of the respective colors of the LEDs are equal and there is no reason to change this relation from Deter, so that claims 18 and 19 also should be allowable.

While the foregoing observations are directed to the primary reference Deter, it is noted that a combination with the Deter teachings of the teachings of the other references does not alter the foregoing observations. Furthermore in view of the foregoing argument, there would be no motivation to combine the teachings of the other references with Deter since such attempted combination would not lead to the benefits of the present invention.


New claim 20 is presented to emphasize that the use of separate multiplicities of the various colorations (red, blue, green) of the light-emitting diodes (LED's) attains a goal of the invention (discussed on page 2 of the present specification) wherein a user of the display can select a desired coloration. It is noted that the electrical interconnection of LED's of the matrix in groups of LED's, each group comprising the claimed multiplicity of LED's of specific color, is not taught by Deter nor by a combination of the teachings of Deter with the teachings of the other cited

references. As a further distinction over the art, claim 21, recites the interleaving of a row of LED's of a specific color (such as red) among the LED's of another color (such as green) in another row, as shown in present Fig. 2.

With respect to the teaching of Lys in point 6 of the Office Action, the Examiner comments on a number of LEDs having one color and being adapted to the spectral sensitivity of the eye and the spectral efficiencies of the diodes, and cites column 55 at lines 16 - 50. The cited passage makes reference to known technology employed, by way of example, in the activation of phosphorescent material in a color display of a computer or television. There is no teaching of the modification of the excitation for the LEDs for adaptation to dim lighting (as in an airline cockpit or bridge of a ship) to match color to the human eye receptivity. This topic, discussed in the present specification in page 2 at lines 24-35, is not discussed in the cited passage of Lys.

In the event there are further issues remaining in any respect the Examiner is respectfully requested to telephone attorney to reach agreement to expedite issuance of this application.

Since the present claims set forth the present invention patentably and distinctly, and are not taught by the cited art either taken alone or in combination, this amendment is believed to place this case in condition for allowance and the Examiner is respectfully requested to reconsider the matter, enter this amendment, and to allow all of the claims in this case.


Respectfully submitted,
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CERTIFICATE OF MAILING UNDER 37 CFR SECTION 1.8(a)

I hereby certify that the accompanying Amendment is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patent, P.O. Box 1450, Alexandria, VA 22313-1450, on MARCH 9, 2004.

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